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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/729,193	12/05/2000	Katsuhisa Yuda	11P348157	6697

466 7590 10/29/2002

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EXAMINER

ALEJANDRO MULERO, LUZ L

ART UNIT	PAPER NUMBER
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1763

6  
DATE MAILED: 10/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-6

**Office Action Summary**

Application No.

09/729,193

Applicant(s)

YUDA, KATSUHISA

Examiner

Luz L. Alejandro

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 August 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 2, 4 and 5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4 and 5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 and 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over NEC Corp., JP 11-168094 in view of Kuthi et al., U.S. Patent 6,106,663.

With respect to claim 1, NEC Corp., shows in fig. 5, the invention substantially as claimed including a plasma CVD apparatus comprising a substrate processing zone 10 with a deposition substrate 4 disposed therein, a plasma generating zone 6 for generating plasma of first gas; and a plasma confining electrode 29, having a hollow structure, for separating the substrate processing zone and the plasma generating zone, and confining the first gas passed through the inlet 5, and having holes for passing first gas containing neutral radicals from the first gas plasma, wherein: the plasma confining electrode has holes for introducing a second gas into the substrate processing zone to form a desired film on the deposition substrate by gas phase chemical reaction between the first gas containing neutral radicals and the second gas. With respect to the plasma confining electrode being vertically spaced apart from the deposition substrate by a distance not greater than 1500 times the mean free path of the blend gas of neutral radicals and the second gas, note that in figure 27 the reference discloses that the spacing between the deposition substrate and the plasma

confining electrode is less than 120 millimeters. Furthermore, the reference discloses that the distance can be just 0-60 mm (see paragraphs 0094-0098 of the English translation).

With respect to claim 4 NEC Corp. shows, in figs. 1-4, the invention substantially as claimed including a plasma CVD apparatus comprising a substrate processing zone 10 with a deposition substrate 4 disposed therein, a plasma generating zone 6 for generating plasma of first gas, and a plasma confining electrode 11 for separating the substrate processing zone and the plasma generating zone and confining the first gas passed through the inlet 5 and having holes for passing first gas containing neutral radicals from the first gas plasma, wherein: the plasma CVD apparatus further comprises a gas introducing member 24 (see Figure 4) disposed between the plasma confining electrode member 11 and the deposition substrate 4, having a hollow structure, and having a plurality of holes through which second gas is introduced into the substrate processing zone to form a desired film on the deposition substrate by gas phase chemical reaction between the first gas containing neutral radicals and the second gas; the gas introducing member is vertically spaced apart from the substrate processing zone (see abstract and the figures). With respect to the gas introducing member being vertically spaced apart from the deposition substrate by a distance not greater than 1500 times the mean free path of the blend gas of neutral radicals and the second gas, note that in figure 27 the reference discloses that the spacing between the deposition substrate and the gas introducing member is less than 120 millimeters.

Furthermore, the reference discloses that the distance can be just 0-60 mm (see paragraphs 0094-0098 of the English translation).

NEC Corp. does not expressly disclose either that the plasma confining electrode accommodates horizontal gas dispersion plates within the hollow structure (claim 1) or that the gas introducing member accommodates horizontal gas dispersion plates within the hollow structure (claim 4). Kuthi et al., U.S. Patent 6,106,663 discloses horizontal gas dispersion plates 122 within a hollow gas introducing member electrode 114 (see Fig. 1B and col. 1-lines 53-67). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of NEC Corp. so as to include the horizontal gas dispersion plates within the hollow structure as taught by Kuthi et al. because this will allow for more uniform flow of gas to the processing region.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-2 and 4-5 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***


Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luz L. Alejandro whose telephone number is 703-305-4545. The examiner can normally be reached on Monday to Thursday from 7:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 703-308-1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

  
Luz L. Alejandro  
Patent Examiner  
Art Unit 1763

October 28, 2002